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OM protein - protein search, using sw model

Run on: March 7, 2005, 06:55:26 ; Search time 165.813 Seconds
(without alignments)
919.008 Million cell updates/sec

Title: US-09-939-537-29_COPY_1_394
Perfect score: 2029
Sequence: 1 MRRGVFRRHLVLQLALP.....SGVLLSNIKVLPTWSTPV 394

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :
1: A_Geneseq_16Dec04:*
2: geneseqp1980a:*
3: geneseqp1980a:*
4: geneseqp2000a:*
5: geneseqp2001a:*
6: geneseqp2002a:*
7: geneseqp2003a:*
8: geneseqp2004a:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match Length	ID	Description
1	2029 100.0	398	AA889450	AA889450 CD4 D1-D4
2	2029 100.0	458	AA807769	AA807769 DNA encod.
3	2029 100.0	462	AA872277	AA872277 CD4:eta b
4	2029 100.0	462	AA878677	AA878677 T-cell re
5	2029 100.0	462	AA889457	AA889457 CD4:gamma
6	2029 100.0	462	AA802214	AA802214 CD4:Fc re
7	2029 100.0	462	AA863142	AA863142 ChimERIC
8	2029 100.0	532	AA872278	AA872278 CD4:gamma
9	2029 100.0	532	AA878678	AA878678 T-cell re
10	2029 100.0	532	AA889458	AA889458 CD4:eta f
11	2029 100.0	532	AA802215	AA802215 CD4:T-cel
12	2029 100.0	532	AA863141	AA863141 ChimERIC
13	2029 100.0	575	AA872276	AA872276 CD4:zeta
14	2029 100.0	575	AA878676	AA878676 T-cell re
15	2029 100.0	575	AA889456	AA889456 CD4:zeta
16	2029 100.0	575	AA802213	AA802213 CD4:T-cel
17	2029 100.0	575	AA863140	AA863140 ChimERIC
18	2029 100.0	630	AA854472	AA854472 Human CD4
19	2029 99.9	398	AA878673	AA878673 CD4 doma
20	2029 99.9	416	AA819509	AA819509 CD4-19M f
21	2029 99.7	436	AA851080	AA851080 Human fus
22	2029 99.7	474	AA819510	AA819510 CD4-19 fu
23	2029 99.7	481	AA819510	AA819510 CD4-19M f
24	2029 99.7	481	AA819510	AA819510 CD4-19 fu
25	2029 99.7	616	AA851082	AA851082 Human fus

26	2023 99.7	616	AA859172	AA859172 CD4-Ig fu
27	2023 99.7	631	AA893009	AA893009 Genetic c
28	2023 99.7	631	AA819508	AA819508 CD4-IgG1
29	2023 99.7	631	AA859172	AA859172 Human fus
30	2023 99.7	631	AA859169	AA859169 CD4-Ig fu
31	2023 99.7	729	AA893008	AA893008 Genetic c
32	2023 99.7	729	AA819507	AA819507 CD4-IgG1
33	2023 99.7	729	AA851078	AA851078 Human fus
34	2023 99.7	729	AA859168	AA859168 CD4-Ig fu
35	2021 99.6	400	AA806374	AA806374 T-uncatcd
36	2021 99.6	458	AA881990	AA881990 Clone p74
37	2021 99.6	458	AA891369	AA891369 T4 protcl
38	2021 99.6	458	AA893826	AA893826 Soluble h
39	2021 99.6	2037	AA804032	AA804032 Full leng
40	2021 99.6	2050	AA807641	AA807641 Deduced s
41	2018 99.5	394	AA893506	AA893506 Derived s
42	2017 99.4	402	AA891922	AA891922 Sequence
43	2017 99.4	402	AA894757	AA894757 Sequence
44	2016 99.4	481	AA851081	AA851081 Human fus
45	2015 99.3	394	AA888328	AA888328 T4 glycop

ALIGNMENTS

RESULT 1
ID AA889450 standard; peptide; 398 AA.
AC AA889450;
DT 26-SEP-1996 (first entry)
XX CD4 D1-D4 domains.
DE CD4 D1-D4 domains.
XX CD7; transmembrane domain; chimeric receptor; CD5; CD34; CH2; CH3; IgG1;
KW human; CD4; HIV; proteinnaceous alpha-helix; T cell; B cell; neutrophil;
KM dendritic cell; therapy; mammal; infection.
XX Homo sapiens.
OS Homo sapiens.
PN WO9603883-A1.
XX 15-FEB-1996.
PD 26-UTL-1995; 95WO-US009468.
PF 02-AUG-1994; 94US-00284391.
XX 24-FEB-1995; 95US-00394388.
PR (GENO) GEN HOSPITAL CORP.
XX (GENO) GEN HOSPITAL CORP.
PI Seed B, Banapur B, Romeo C, Kolanus W;
XX WPI; 1996-129034/13.
DR N-PSDB; AAT10797.
XX Membrane-bound chimeric receptor comprising extracellular portion
PT including CD4 fragment - cells expressing receptor can be used for
XX treatment of HIV infection.
PS Example 10; Fig 23; 134p; English.
XX This sequence represents the D1-D4 domains of CD4. This sequence is
CC included in the membrane bound proteinnaceous chimeric receptor of the
CC invention. The extracellular portion of the chimeric receptor contains a
CC fragment of CD4 amino acids 1-194 or 1-200 of the CD4 sequence which
CC specifically recognizes and binds HIV-infected cells but does not
CC mediate HIV infection. The extracellular domain of the receptor is
CC separated from the cell membrane by 48 or 72 angstroms, or by one or more
CC proteinnaceous alpha-helices. The transmembrane region of the chimeric
CC receptor contains a portion of the CD7, CD5 or CD34 transmembrane domain.
CC Alternatively, the extracellular portion of the receptor can also be

CC separated from the intracellular domain by the hinge, CH2 and CH3 domains
 CC of human IgG1. The cells expressing the receptor are preferably T cells,
 CC B cells, neutrophils, or dendritic cells. The therapeutic cells
 CC expressing the chimeric receptor are administered to a mammal to treat
 CC HIV infection

XX Sequence 398 AA;

Query Match 100.0%; Score 2029; DB 2; Length 398;
 Best Local Similarity 100.0%; Pred. No. 2, 3e-135;
 Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNRGVPFRHLILVQLALPPAATQGNKYVLGKKGDTVELCTASQKKSIOFHWKNSNOIK 60
 DB 1 MNRGVPFRHLILVQLALPPAATQGNKYVLGKKGDTVELCTASQKKSIOFHWKNSNOIK 60
 QY ILGNQGSFLTKGSPSKLNDRADSRRLMDQGNPFLIKNLKIEDSDTYICEVEDQKEVOL 120
 DB 61 ILGNQGSFLTKGSPSKLNDRADSRRLMDQGNPFLIKNLKIEDSDTYICEVEDQKEVOL 120
 QY 121 LVFGLTANSDTHLLQGOSLTLTLESPPSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 DB 121 LVFGLTANSDTHLLQGOSLTLTLESPPSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 QY 181 TWTCVVLQONKKVEFKIDIVLAFQKASSIVYKKEGEVFSFPLAFVTKLTGSGELMW 240
 DB 181 TWTCVVLQONKKVEFKIDIVLAFQKASSIVYKKEGEVFSFPLAFVTKLTGSGELMW 240
 QY 241 QAERASSSKSWITFDLKNKEVSVKRVTDPKLQNGKPLHLTLPLQALPQYAGSGNLTIA 300
 DB 241 QAERASSSKSWITFDLKNKEVSVKRVTDPKLQNGKPLHLTLPLQALPQYAGSGNLTIA 300
 QY 301 LEAKTGKLGHEVNLVVMRAATQOKNLTCEVWGPTSPKMLSLKLENKEAKVSKREKPVWV 360
 DB 301 LEAKTGKLGHEVNLVVMRAATQOKNLTCEVWGPTSPKMLSLKLENKEAKVSKREKPVWV 360
 QY 361 LNPEAGMWCILSDSGQVLLSNIKVLPTWSTPV 394
 DB 361 LNPEAGMWCILSDSGQVLLSNIKVLPTWSTPV 394

RESULT 2

AAB07769 standard; protein; 458 AA.

XX AAB07769;

XX 07-NOV-2000 (first entry)

XX DNA encoding a human T4 glycoprotein.

XX Human; T4 glycoprotein; human immunodeficiency virus; HIV;
 XX envelope glycoprotein; AIDS; virus binding.

OS Homo sapiens.

XX Key Location/Qualifiers

XX Peptide 1..23

XX Modified-site /note= "leader sequence"

XX Modified-site /note= "N-linked glycosylation site"

XX Modified-site /note= "N-linked glycosylation site"

XX Domain /note= "transmembrane domain"

XX Domain /note= "cytoplasmic domain"

XX US6093539-A.
 XX 25-JUL-2000.
 XX 06-JUN-1995; 95US-00466368.

XX 21-AUG-1986; 86US-00898587.
 PR 11-JUN-1991; 91US-00713564.
 PR 06-JUL-1992; 92US-00909021.
 PR 12-DEC-1994; 94US-00354452.

XX (UYCO) UNIV COLUMBIA NEW YORK.

PI Madden PU, Chess L, Axel R, Weiss R, McDougal JS, Littman DR;

XX WPI, 2000-505203/45.

XX N-PSDB; AAA59352.

PT New isolated nucleic acid encoding a human T cell surface protein and the
 PT soluble surface T4 glycoprotein that it encodes, useful as prophylaxis
 PT for treating a subject infected with human acquired immune deficiency
 PT syndrome virus.

XX Disclosure; Fig 6A-B; 69pp; English.

XX The present sequence represents a human T4 glycoprotein. An aqueous-
 CC soluble polypeptide comprising a portion of a human T4 glycoprotein
 CC specifically forms a complex with a human immunodeficiency virus (HIV) .
 CC envelope glycoprotein. The DNA is useful for producing the soluble
 CC surface T4 glycoprotein. The soluble surface T4 glycoprotein is useful as
 CC a therapeutic agent, i.e. as prophylaxis for treating a subject infected
 CC with an HIV virus. Thus, the soluble T4 glycoprotein is useful for
 CC treating human AIDS. The soluble T4 glycoprotein is also useful in
 CC diagnostic or screening assays, e.g. for screening inhibitors of virus
 CC binding, or for detecting and quantitating T4, T4+ cells and antibodies
 CC to T4, which are of diagnostic value for AIDS

XX Sequence 458 AA;

Query Match 100.0%; Score 2029; DB 3; Length 458;
 Best Local Similarity 100.0%; Pred. No. 2, 7e-135;
 Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNRGVPFRHLILVQLALPPAATQGNKYVLGKKGDTVELCTASQKKSIOFHWKNSNOIK 60
 DB 1 MNRGVPFRHLILVQLALPPAATQGNKYVLGKKGDTVELCTASQKKSIOFHWKNSNOIK 60
 QY 61 ILGNQGSFLTKGSPSKLNDRADSRRLMDQGNPFLIKNLKIEDSDTYICEVEDQKEVOL 120
 DB 61 ILGNQGSFLTKGSPSKLNDRADSRRLMDQGNPFLIKNLKIEDSDTYICEVEDQKEVOL 120
 QY 121 LVFGLTANSDTHLLQGOSLTLTLESPPSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 DB 121 LVFGLTANSDTHLLQGOSLTLTLESPPSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 QY 181 TWTCVVLQONKKVEFKIDIVLAFQKASSIVYKKEGEVFSFPLAFVTKLTGSGELMW 240
 DB 181 TWTCVVLQONKKVEFKIDIVLAFQKASSIVYKKEGEVFSFPLAFVTKLTGSGELMW 240
 QY 241 QAERASSSKSWITFDLKNKEVSVKRVTDPKLQNGKPLHLTLPLQALPQYAGSGNLTIA 300
 DB 241 QAERASSSKSWITFDLKNKEVSVKRVTDPKLQNGKPLHLTLPLQALPQYAGSGNLTIA 300
 QY 301 LEAKTGKLGHEVNLVVMRAATQOKNLTCEVWGPTSPKMLSLKLENKEAKVSKREKPVWV 360
 DB 301 LEAKTGKLGHEVNLVVMRAATQOKNLTCEVWGPTSPKMLSLKLENKEAKVSKREKPVWV 360
 QY 361 LNPEAGMWCILSDSGQVLLSNIKVLPTWSTPV 394
 DB 361 LNPEAGMWCILSDSGQVLLSNIKVLPTWSTPV 394

RESULT 3

AAR27277 standard; protein; 462 AA.

XX AAR27277;

DT	25-MAR-2003	(revised)
DT	28-JUL-1995	(first entry)
XX		
DE	CD4:eta peptide chimeric protein.	
XX		
KW	Fusion protein; CD4; extracellular domain; zeta; eta; gamma;	
KV	membrane spanning domain; intracellular domain; type I;	
KW	integral membrane homodimer; TCR; T cell antigen receptor;	
KV	extracellular domain; mouse; human; receptor; chimera;	
KW	HPB-ALL tumour cell line; natural killer cell.	
XX		
OS	Homo sapiens.	
XX		
FH	Key	Location/Qualifiers
FT	Protein	1..399
FT		/note="CD4 extracellular domain"
FT	Protein	400..462
PN		/note="Zeta membrane spanning and intracellular domain"
PD	MO9215322-AL	
PP	17-SEP-1992	
PF	06-MAR-1992;	92WO-US001785.
PR	07-MAR-1991;	91US-00665961.
PA	(GEHO) GEN HOSPITAL CORP.	
PI	Seed B, Romeo C, Kolanus W;	
DR	WP1; 1992-331474/40.	
DR	N-PSDB; AAO28705.	
XX		
PT	Therapeutic cells expressing chimeric receptors - directing cellular response to an infective agent; useful in treating HIV-1, AIDS	
XX	Pneumocystis carinii infections etc.	
PS	Example 2; Page 73-74; 11app; English.	
XX		
CC	This sequence represents a fusion protein between the CD4 extracellular domain and the eta protein membrane spanning domain and intracellular domain. Eta is an isoform of zeta (see also AA027276) which is a 32 kD type I integral membrane homodimer, which arises by alternate mRNA splicing. It is present in reduced amounts in cells expressing the T cell antigen receptor. Zeta-eta heterodimers are thought to mediate the CC formation of inositol phosphates, as well as the receptor initiated cell death called apoptosis. In the production of the CD4 receptor chimera, the eta cDNA was isolated from the HPB-ALL tumour cell line and from human natural killer cells. The eta cDNA was joined to the extracellular domain of an engineered form of CD4 possessing a BamHI site just upstream of the membrane spanning domain, by a BamHI site naturally present a few residues upstream of the membrane spanning domain. (Updated on 25-MAR-2003 to correct PN field.)	
SQ	Sequence 462 AA;	
Query Match	100.0%; Score 2029; DB 2; Length 462;	
Best Local Similarity	100.0%; Pred. No. 2,86-135;	
Matches 394;	Conservative 0; Mismatches 0; Indels 0; Gaps 0.0;	
Dd		
OY	1 MNRGVPFHLILVTOTALLPATQGNKVVLLGKKGDVTETCTAAGSKSIQFMKNKNOIK 60	
Dd	1 MNRGVFPFHLLIVQLALIPATQGNKVVLGGKSDTVELITCTASQKSIQFMKNKNOIK 60	
OY	61 ILNGOGSFLTKGPSKLNDRADSRRLMDQGNPLIIKNLIKIBDSPTYICEVDQKEEYOL 120	
Dd	61 ILNGOGSFLTKGPSKLNDRADSRRLMDQGNPLIIKNLIKIBDSPTYICEVDQKEEYOL 120	
OY	121 LVFGITANSDFHLILOGSLTLTLSPSSPEVCGRSPRGNKIQQAKTLTSVSQLELODSG 180	
Dd	121 LVFGITANSDFHLILOGSLTLTLSPSSPEVCGRSPRGNKIQQAKTLTSVSQLELODSG 180	

QY	181	IWTCIVLONOKKVEKIDIVLAPKASISVYKKEGEVSEFPPLAFTYKLTGSGELMW	240
DB	+181	TWTCIVLONOKKVEKIDIVLAPKASISVYKKEGEVSEFPPLAFTYKLTGSGELMW <td>240</td>	240
QY	241	QAEKASSKSWITTPDLKNKEVSVKRVTDOPKLOMGKULPLHLTLPOLPOVAGSGLTLA <td>300</td>	300
DB	241	QAEKASSKSWITTPDLKNKEVSVKRVTDOPKLOMGKULPLHLTLPOLPOVAGSGLTLA <td>300</td>	300
QY	301	LEATGKGLHOENVLVWMPATOLQKULTEWGWGPTSPKMLSLKENKANVSKREKPVW <td>360</td>	360
DB	301	LEATGKGLHOENVLVWMPATOLQKULTEWGWGPTSPKMLSLKENKANVSKREKPVW <td>360</td>	360
QY	361	LNPEAGMWQCLLSDSGVLLSNTIKVLTWSTPV <td>394</td>	394
DB	361	LNPEAGMWQCLLSDSGVLLSNTIKVLTWSTPV <td>394</td>	394
RESULT 4			
ID	AA78677	standard; protein; 462 AA.	
AC	AA78677;		
DT	16-APR-1996	(first entry)	
DE	T-cell receptor gamma.		
KW	Chimeric receptor; CD4, T-cell receptor gamma; HIV, cytolysis;		
OS	human immunodeficiency virus; adoptive immunotherapy.		
XX	Homo sapiens.		
XX	W09521528-A1.		
XX	17-AUG-1995.		
XX	12-JAN-1995;	95WO-US000454.	
XX	14-FEB-1994;	94US-00195385.	
XX	02-AUG-1994;	94US-00284391.	
XX	(GENO) GEN HOSPITAL CORP.		
XX	Seed B, Banapour B, Romeo C, Kolanus W;		
XX	WPI, 1995-292893/38.		
XX	P-PSDB; AAQ96123.		
XX	Target cytolysis of HIV-infected cells - by chimeric CD4 receptor-bearing cells.		
XX	Example 2; Page 77-78; 118pp; English.		
XX	Fusion proteins comprising the extracellular domain of CD4 fused to T-cell receptor zeta, gamma or eta (AA78676-78, respectively) were		
XX	expressed in CV1 using a vaccine virus vector. These CD4,zeta, CD4,gamma and CD4:eta chimeric receptors mediated cytolysis of targets expressing HIV gp120/41		
XX	Sequence 462 AA;		
QY	100.0%; Score 2029; DB 2; Length 462;		
DB	Best Local Similarity 100.0%; Pred. NO. 2.8e-135; Indels 0; Gaps 0		
QY	1 MNRGVPFPHLLVQLALLPATQGNKVVLGKGGDYVELTCTASQKSIQFHWKNSNOIX	60	
DB	1 MNRGVPFPHLLVQLALLPATQGNKVVLGKGGDYVELTCTASQKSIQFHWKNSNOIX	60	
QY	61 ILNGQGSFLTGTGPKLNDRADSRSLMDQGNFPLIKVLKLTEDSTYICEVEDQKEEVL	120	
DB	61 ILNGQGSFLTGTGPKLNDRADSRSLMDQGNFPLIKVLKLTEDSTYICEVEDQKEEVL	120	

QY		12	LVFGLTASDTHLLOQSSTLTLETSPGSSPSVOCRSPKGNIOGGKTLSVSOLSLQDSG	180
Dd		121	LVFGLTASDTHLLOQSSTLTLETSPGSSPSVOCRSPKGNIOGGKTLSVSOLSLQDSG	180
QY		181	TWTCVTI.ONOKKVEFKIDIVLAFOKASSIVYKKGEQVESFPFLATVEKLTGSGELMW	240
Dd		181	TWTCVTI.ONOKKVEFKIDIVLAFOKASSIVYKKGEQVESFPFLATVEKLTGSGELMW	240
QY		241	QAERSSSSKSWITTPDLKNKEVSVKVTODPKLOMGKPLPHILTLPOLPOYGSSGLTLTA	300
Dd		241	QAERSSSSKSWITTPDLKNKEVSVKVTODPKLOMGKPLPHILTLPOLPOYGSSGLTLTA	300
QY		301	LEAKTGKLHOEVNVLVMRBATOLOKNLTCEVMWPSPSKMLSLKENKEAVSRKREPVWY	360
Dd		301	LEAKTGKLHOEVNVLVMRBATOLOKNLTCEVMWPSPSKMLSLKENKEAVSRKREPVWY	360
QY		361	LNPEAGMWOCLISDSGOYLBSBNIKVLPWTSTPV	394
Dd		361	LNPEAGMWOCLISDSGOYLBSBNIKVLPWTSTPV	394

RESULT 5
AAR89457 standard; protein; 462 AA.
ID AAR89457
XX AAR89457;
AC AAR89457;
DT 26-SEP-1996 (first entry)
XX CD4:gamma fusion protein.
DE CD4:gamma fusion protein.
XX CD7; transmembrane domain; chimeric receptor; CD5; CD34; CH2, CH3, IgG1,
KW human; CD4; HIV; proteinaceous alpha-helix; T cell; B cell; neutrophil;
KV dendritic cell; therapy; mammal; infection.
XX Synthetic.
OS
XX W09603883-A1.
PN M09603883-A1.
XX 15-FEB-1996.
PD 15-FEB-1996.
PF 26-JUL-1995; 95WMO-US009468.
XX 02-AUG-1994; 94US--00284391.
PR 24-FEB-1995; 95US-00394388.
XX (GENO) GEN HOSPITAL CORP.
PA Seed B, Banapour B, Romeo C, Kolanus W;
XX WPI, 1996-129034/13.
DR N-PSDB; AAT10802.
XX Membrane-bound chimeric receptor comprising extracellular portion
PT including CD4 fragment - cells expressing receptor can be used for
PT treatment of HIV infection.
PS Example 2; Page 79; 134pp; English.

CC	neutrophils, or dendritic cells. The therapeutic cells expressing the
XX	chimeric receptor are administered to a mammal to treat HIV infection
XX	Sequence 462 AA;
Query Match	100.0%; Score 2029; DB 2; Length 462;
Best Local Similarity	100.0%; Pred. No. 2, 8e-135;
Matches 394; Conservative	0; Mismatches 0; Indels 0; Gaps 0;
QY	1 MNRGVPFRHLILVLTALLPATQGNKVLGKKGDVLELTCTASQKKSIOFHMKNSNOIK 60
DB	1 MNRGVPFRHLILVLTALLPATQGNKVLGKKGDVLELTCTASQKKSIOFHMKNSNOIK 60
QY	61 ILGNQGSFLTYGSPKLNDRADRSRLMDQGNFPLIKNLKTHSDPTIYCEVEDQKEEVOL 120
DB	61 ILGNQGSFLTYGSPKLNDRADRSRLMDQGNFPLIKNLKTHSDPTIYCEVEDQKEEVOL 120
QY	121 LVFGLTNSDPTHLILQGSILTLTLESPPGSSPSVQCRSPRGNIQGGKTLVSQLELQDSG 180
DB	121 LVFGLTNSDPTHLILQGSILTLTLESPPGSSPSVQCRSPRGNIQGGKTLVSQLELQDSG 180
QY	181 TWCTCTVLQNKQKVEFKIDIVLAFQAKSIIYKKEGQVEFSPPLAFTVEKLTGSGELMW 240
DB	181 TWCTCTVLQNKQKVEFKIDIVLAFQAKSIIYKKEGQVEFSPPLAFTVEKLTGSGELMW 240
QY	241 QAEPAASSKSKWITTTDLKKEVSVKRVYODPKLQNGKTLPLHLTLPQALPOYAGSGNLTIA 300
DB	241 QAEPAASSKSKWITTTDLKKEVSVKRVYODPKLQNGKTLPLHLTLPQALPOYAGSGNLTIA 300
QY	301 LEARTGKLHQRVNLVVMRATOLQNLACEVWGPSPKMLSLKLENKEAKVSKKEKPVWV 360
DB	301 LEARTGKLHQRVNLVVMRATOLQNLACEVWGPSPKMLSLKLENKEAKVSKKEKPVWV 360
QY	361 LNPEAGMWQCLLSDSGVLLSNIKVLPTWSTPV 394
DB	361 LNPEAGMWQCLLSDSGVLLSNIKVLPTWSTPV 394
RESULT 6	
AAW02214	AAW02214 standard; protein; 462 AA.
XX	AAW02214;
AC	AAW02214;
XX	
DT	11-NOV-1996 (first entry)
XX	
DE	CD4:Fc receptor gamma chain chimaeric receptor.
XX	
KM	Chimaeric receptor; cellular immunity; adoptive immunotherapy; CD4;
KW	human immunodeficiency virus type 1; HIV-1; AIDS; therapy;
XX	Fc receptor gamma chain; cytotoxic T lymphocyte; CTL.
OS	
XX	Homo sapiens.
XX	
PH	Key
FT	Domain
FT	1..393
FT	/label= "Extracellular_domain"
FT	/note= "CD4 extracellular domain"
FT	394..397
FT	/label= linker
FT	/note= "encoding DNA contains a BamHI site used for
FT	fusion construction"
FT	398..462
FT	/note= "region of fusion derived from gamma chain,
FT	preferred signal-transducing portions for constructs of
FT	the invention are amino acids 421-462 and 402-419"
FT	400..462
FT	/label= Transmembrane+Intracellular_domains
XX	
XX	WO9625953-A1.
XX	
PN	
XX	
PD	29-AUG-1996.
XX	

PF 25-JAN-1996; 96MO-US001056.
 XX
 PR 24-FEB-1995; 95US-00394176.
 XX
 PA (GEHO) GEN HOSPITAL CORP.
 XX
 PI Seed B, Romeo C, Kolanus W;
 XX
 DR MPI: 1996-402134/40.
 DR N-PSDB; AAT36759.
 XX
 PT Direction of cellular immune response using therapeutic cell expressing 2
 PT chimeric receptors - comprising region binding to target cell and region
 PT that signals target cell destruction, or CD28 region, partic. for
 PT eliminating HIV-infected cells.
 XX
 PS Claim 7; Page 76; 120pp; English.
 XX
 CC A chimeric receptor (AAW00214) comprises the extracellular domain of an
 CC engineered form of the CD4 cellular receptor for HIV and the
 CC transmembrane and intracellular regions, including the cytoplasmic signal-
 CC transducing portion, of the human Fc receptor gamma chain; the region of
 CC the fusion is shown in AAW02223. It can be obtd. by inserting a gene
 CC fusion (AAT36759) into a vaccinia virus vector and expression in host
 CC cells. Chimeric receptors comprising CD4 fused to Fc receptor gamma or T
 CC -cell receptor zeta (see also AAW02213) or eta (AAW02215) chains are
 CC capable of directing cytotoxic T lymphocytes to specifically recognise
 CC and kill cells expressing HIV gp120, thus providing a therapy for AIDS
 CC
 XX
 SQ Sequence 462 AA;
 Query Match 100.0%; Score 2029; DB 2; Length 462;
 Best Local Similarity 100.0%; Pred. No. 2.8e-135; Indels 0; Gaps 0;
 Matches 394; Conservative 0; Mismatches 0;
 QY 1 MNRGVFRRHLVLAQALPAATQGNKVVGLGKGDVVELTCTASOKKSIOFHKNSNOIK 60
 DB 1 MNRGVFRRHLVLAQALPAATQGNKVVGLGKGDVVELTCTASOKKSIOFHKNSNOIK 60
 QY 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 DB 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 QY 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 DB 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 QY 121 LVFGLTANSDDTHLQOSLTLTLESPGSSPSVQCSPPGKNIQGGKTLSVSQLEIDSG 180
 DB 121 LVFGLTANSDDTHLQOSLTLTLESPGSSPSVQCSPPGKNIQGGKTLSVSQLEIDSG 180
 QY 181 TWTCYLVQNOQKVEFKIDIVVLAFOKASIVYKKEGEQVFSFPLAFTVEKLTGSGELMW 240
 DB 181 TWTCYLVQNOQKVEFKIDIVVLAFOKASIVYKKEGEQVFSFPLAFTVEKLTGSGELMW 240
 QY 241 QABRASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKCLPLHLTLPLAQLQYAGSGNLTLLA 300
 DB 241 QABRASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKCLPLHLTLPLAQLQYAGSGNLTLLA 300
 QY 301 LEAKTGLHQBENLVVMRATQLOKNTLCEVWGPTSPKMLSLKLENKEAVSRRKRPVWY 360
 DB 301 LEAKTGLHQBENLVVMRATQLOKNTLCEVWGPTSPKMLSLKLENKEAVSRRKRPVWY 360
 QY 361 LNPBAGMOCILSDSGOVLLESNIKVLPTWSTPV 394
 DB 361 LNPBAGMOCILSDSGOVLLESNIKVLPTWSTPV 394
 RESULT 7
 AAW83142
 ID AAW83142 standard; protein; 462 AA.
 XX
 AC AAW83142;
 XX
 DT 03-FEB-1999 (first entry)
 XX
 DE Chimeric receptor containing mouse gamma polypeptide.

XX
 KW Human; zeta; eta; gamma; membrane-bound chimeric receptor; infection;
 KW tumour; cancer cell; autoimmune-generated cell; T cell receptor; CD3;
 KW CD4; B cell receptor; Fc receptor; pathogen; bacterial; fungal;
 XX
 XX protozoan; viral.
 XX
 OS Synthetic.
 OS Mus sp.
 XX
 PN US5843728-A.
 XX
 PD 01-DEC-1998.
 XX
 PF 05-APR-1995; 95US-00417495.
 XX
 PR 07-MAR-1991; 91US-00665961.
 PR 06-MAR-1992; 92US-00847566.
 PR 28-FEB-1994; 94US-00203866.
 XX
 PA (GEHO) GEN HOSPITAL CORP.
 XX
 PI Romeo C, Kolanus W, Seed B;
 XX
 DR MPI: 1996-044582/04.
 DR N-PSDB; AAV70158.
 XX
 PT Membrane-bound chimeric receptors - comprising extracellular portion
 PT which recognises and binds a target cell and an intracellular portion of
 PT e.g. a T-cell receptor.
 XX
 PS Example 2; Col 43-46; 57pp; English.
 XX
 CC The present invention describes DNA encoding a membrane-bound chimeric
 CC receptor comprising: (a) an extracellular portion that specifically
 CC recognises and binds a target cell or a target infective agent; and (b)
 CC an intracellular portion of a T-cell receptor CD3, zeta or eta
 CC polypeptide, a B-cell receptor polypeptide or an Fc receptor polypeptide.
 CC The present sequence represents a chimeric receptor containing the mouse
 CC gamma polypeptide. Cells expressing chimeric receptors of the present
 CC invention can be administered to mammals in order to destroy pathogens
 CC (e.g. bacteria, fungi, protozoa or viruses, especially HIV), cancer cells
 CC or autoimmune-generated cells
 CC
 XX
 SQ Sequence 462 AA;
 Query Match 100.0%; Score 2029; DB 2; Length 462;
 Best Local Similarity 100.0%; Pred. No. 2.8e-135; Indels 0; Gaps 0;
 Matches 394; Conservative 0; Mismatches 0;
 QY 1 MNRGVFRRHLVLAQALPAATQGNKVVGLGKGDVVELTCTASOKKSIOFHKNSNOIK 60
 DB 1 MNRGVFRRHLVLAQALPAATQGNKVVGLGKGDVVELTCTASOKKSIOFHKNSNOIK 60
 QY 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 DB 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 QY 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 DB 61 ILGNQSSFLTGPSKLNDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEVQL 120
 QY 121 LVFGLTANSDDTHLQOSLTLTLESPGSSPSVQCSPPGKNIQGGKTLSVSQLEIDSG 180
 DB 121 LVFGLTANSDDTHLQOSLTLTLESPGSSPSVQCSPPGKNIQGGKTLSVSQLEIDSG 180
 QY 181 TWTCYLVQNOQKVEFKIDIVVLAFOKASIVYKKEGEQVFSFPLAFTVEKLTGSGELMW 240
 DB 181 TWTCYLVQNOQKVEFKIDIVVLAFOKASIVYKKEGEQVFSFPLAFTVEKLTGSGELMW 240
 QY 241 QABRASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKCLPLHLTLPLAQLQYAGSGNLTLLA 300
 DB 241 QABRASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKCLPLHLTLPLAQLQYAGSGNLTLLA 300
 QY 301 LEAKTGLHQBENLVVMRATQLOKNTLCEVWGPTSPKMLSLKLENKEAVSRRKRPVWY 360
 DB 301 LEAKTGLHQBENLVVMRATQLOKNTLCEVWGPTSPKMLSLKLENKEAVSRRKRPVWY 360

QY 361 LNPEAGMWCCLISDSGQVLLSESNIKVLPWTGSTPV 394
 DB 361 LNPEAGMWCCLISDSGQVLLSESNIKVLPWTGSTPV 394

RESULT 8
 AAR27278
 ID AAR27278 standard; protein; 532 AA.
 XX
 AC AAR27278;
 XX
 DT 25-MAR-2003 (revised)
 DT 28-JUL-1995 (first entry)
 XX
 DE CD4:gamma peptide chimeric protein.
 XX
 KW Fusion protein; CD4; extracellular domain; zeta; eta; gamma;
 KW membrane spanning domain; intracellular domain; type I;
 KW integral membrane homodimer; TCR; T cell antigen receptor;
 KW extracellular domain; mouse; human; receptor; chimera;
 KW Hsp-ALU tumour cell line; natural killer cell.
 KW
 OS Homo sapiens.
 FN MO9215322-A1.
 PD 17-SEP-1992.
 PF 06-MAR-1992; 92MO-US001785.
 PR 07-MAR-1991; 91US-00665961.
 XX
 PA (GEHO) GEN HOSPITAL CORP.
 PI Seed B, Romeo C, Kolanus W;
 XX
 DR WPI; 1992-331474/40.
 DR N-PSDB; AAQ28706.
 XX
 PT Therapeutic cells expressing chimeric receptors - directing cellular
 PT response to an infective agent, useful in treating HIV-1, AIDS
 PT Pneumocystis carinii infections etc.
 XX
 PS Example 2; Page 74-76; 114pp; English.
 XX
 CC This sequence represents a fusion protein between the CD4 extracellular
 CC domain and the gamma protein membrane spanning domain and intracellular
 CC domain. The Fc-receptor-associated gamma chain is expressed in cell
 CC surface complexes with additional polypeptides, some of which mediate
 CC ligand recognition, and others which have undefined function. Gamma bears
 CC a homodimeric structure and overall organisation very similar to that of
 CC zeta (see also AAQ28704), and is a component of both the mast
 CC cell/basophil high affinity IGE receptor, Fc-epsilon-R1, which consists
 CC of at least three distinct polypeptide chains and one of the low affinity
 CC receptors for IGG, represented in mice by Fc-gamma-R1I-alpha. In the
 CC production of the CD4 receptor chimera, the gamma cDNA was isolated from
 CC the Hsp-ALU tumour cell line and from human natural killer cells. The
 CC gamma cDNA was joined to the extracellular domain by engineering a BamHI
 CC site just upstream of the membrane spanning domain, by a BamHI site
 CC naturally present a few residues upstream of the membrane spanning
 CC domain. (Updated on 25-MAR-2003 to correct PW field.)
 CC
 XX
 SQ Sequence 532 AA;

Query Match 100.0%; Score 2029; DB 2; Length 532;
 Best Local Similarity 100.0%; Pred. No. 3.3e-135;
 Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNRGVPRHLLVLTQALPAATQGNKRVLGKKGDVLTCTASQKKSIOFHWNKSNQIK 60
 DB 1 MNRGVPRHLLVLTQALPAATQGNKRVLGKKGDVLTCTASQKKSIOFHWNKSNQIK 60

QY 61 ILGNQSSFLTQKPSKLNDRADSRSLMDQGNFPLIITKNKIDSDTYICEVEDQKEEVOL 120

DB 61 ILGNQSSFLTQKPSKLNDRADSRSLMDQGNFPLIITKNKIDSDTYICEVEDQKEEVOL 120

QY 121 LVFGLTANSDTHLLQGSSTLTLESPPGSSPSVQCRSPRGKNIQGGKTLSVQLELQDSG 180
 DB 121 LVFGLTANSDTHLLQGSSTLTLESPPGSSPSVQCRSPRGKNIQGGKTLSVQLELQDSG 180

QY 181 TWTCTVLQKQKVEFKIDIVLAFQKASSIVYKKGQVEFSFPLAFVTEKLTGSGELMW 240
 DB 181 TWTCTVLQKQKVEFKIDIVLAFQKASSIVYKKGQVEFSFPLAFVTEKLTGSGELMW 240

QY 241 QAERASSSKSWITTFDLKNEVSVKRYTODPKLOMGKKPLHITLPOALPOYAGSGNLTLA 300
 DB 241 QAERASSSKSWITTFDLKNEVSVKRYTODPKLOMGKKPLHITLPOALPOYAGSGNLTLA 300

QY 301 LEAKTGKLGHOEVNLYVMRATOLQKULTCVWGPTSPKMLSLKLNKKAIVSKREKPVWV 360
 DB 301 LEAKTGKLGHOEVNLYVMRATOLQKULTCVWGPTSPKMLSLKLNKKAIVSKREKPVWV 360

QY 361 LNPEAGMWCCLISDSGQVLLSESNIKVLPWTGSTPV 394
 DB 361 LNPEAGMWCCLISDSGQVLLSESNIKVLPWTGSTPV 394

RESULT 9
 AAR78678
 ID AAR78678 standard; protein; 532 AA.
 XX
 AC AAR78678;
 XX
 DT 16-APR-1996 (first entry)
 DT
 XX
 DE T-cell receptor eta.
 XX
 KW Chimeric receptor; CD4; T-cell receptor eta; HIV; cytolysis;
 KW human immunodeficiency virus; adoptive immunotherapy.
 XX
 OS Homo sapiens.
 FN WO9521528-A1.
 PD 17-AUG-1995.
 PF 12-JAN-1995; 95WO-US000454.
 PR 14-FEB-1994; 94US-00195395.
 PR 02-AUG-1994; 94US-00284391.
 XX
 PA (GEHO) GEN HOSPITAL CORP.
 PI Seed B, Banapour B, Romeo C, Kolanus W;
 XX
 DR WPI; 1995-292893/38.
 DR N-PSDB; AAQ96124.
 XX
 PT Target cytolysis of HIV-infected cells - by chimeric CD4 receptor-bearing
 PT cells.
 XX
 PS Example 2; Page 78-79; 118pp; English.
 XX
 CC Fusion proteins comprising the extracellular domain of CD4 fused to T-
 CC cell receptor zeta, gamma or eta (AAR78676-78, respectively) were
 CC expressed in CV1 using a vaccine virus vector. These CD4:zeta, CD4:gamma
 CC and CD4:eta chimeric receptors mediated cytolysis of targets expressing
 CC HIV gp120/41
 CC
 XX
 SQ Sequence 532 AA;

Query Match 100.0%; Score 2029; DB 2; Length 532;
 Best Local Similarity 100.0%; Pred. No. 3.3e-135;
 Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNRGVPRHLLVLTQALPAATQGNKRVLGKKGDVLTCTASQKKSIOFHWNKSNQIK 60

```

DB 1 MNRGVFRRHLLVQLALIPAATQGNKVVLGKKGDTVELCTASQKKSIQFHWKNSNQIK 60
QY 61 IIGNQGSPFLTKGPKSLNDRADSRSLMDQGNPFLIKNLKIEDSDTYICEVEDQKEEVOL 120
DB 61 IIGNQGSPFLTKGPKSLNDRADSRSLMDQGNPFLIKNLKIEDSDTYICEVEDQKEEVOL 120
QY 121 LVFGLTANSDTHLQGSLLTLTLESPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
DB 121 LVFGLTANSDTHLQGSLLTLTLESPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
QY 181 TWCTVLOQKQKVEFKIDIVLAFOKASSIVYKKEGEOVEFSPFLAFTVEKLTGSGELMW 240
DB 181 TWCTVLOQKQKVEFKIDIVLAFOKASSIVYKKEGEOVEFSPFLAFTVEKLTGSGELMW 240
QY 241 QAERASSSKSWITFDLKNKEVSVKRVTOPKLOMGKKLPLHLTLPOLPOYAGSGNLTIA 300
DB 241 QAERASSSKSWITFDLKNKEVSVKRVTOPKLOMGKKLPLHLTLPOLPOYAGSGNLTIA 300
QY 301 LEAKTGKLEHVEVNLVVMRATQLOKNLTCVWGPTSPKMLSLKENKEAKVSRERKPVVW 360
DB 301 LEAKTGKLEHVEVNLVVMRATQLOKNLTCVWGPTSPKMLSLKENKEAKVSRERKPVVW 360
QY 361 LNPEAGMOCCLSDSGQVLLSNIKVLPTWSTPV 394
DB 361 LNPEAGMOCCLSDSGQVLLSNIKVLPTWSTPV 394

RESULT 10
AAR89458
ID AAR89458 standard; protein; 532 AA.
AC AAR89458;
XX
XX 26-SEP-1996 (first entry)
DE CD4:eta fusion protein.
XX
XX CD7; transmembrane domain; chimeric receptor; CD5; CD34; CH2; CH3; IgG1;
KM human; CD4; HIV; proteinaceous alpha-helix; T cell; B cell; neutrophil;
KW dendritic cell; therapy; mammal; infection.
XX
XX OS Synthetic.
XX
XX WO9603863-A1.
XX
XX 15-FEB-1996.
PD
XX
XX 26-JUL-1995; 95MO-US009468.
PF
XX
XX 02-AUG-1994; 94US-00284391.
PR 24-FEB-1995; 95US-00394388.
XX
XX (GCHO ) GEN HOSPITAL CORP.
PA
XX
XX Seed B, Banapur B, Romeo C, Kojanus W;
PI
XX
XX WPI; 1996-129034/13.
DR N-PSDB; AAT10803.
XX
XX Membrane-bound chimeric receptor comprising extracellular portion
PT including CD4 fragment - cells expressing receptor can be used for
PT treatment of HIV infection.
XX
XX Example 2; Page 80-81; 134pp; English.
XX
XX AAT10803-T10803 represent membrane bound proteinaceous chimeric receptors
CC of the invention. This sequence represents the CD4:eta chimera. The
CC transmembrane region of the chimeric receptor acts to separate the
CC intracellular and extracellular domains of the chimera, and contains a
CC portion of the CD7 (see AAR89440), CD5 or CD34 transmembrane domain.
CC Alternatively, the extracellular portion of the receptor can be separated
CC from the intracellular domain by the hinge, CH2 and CH3 domains of human

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CC IgG1 (see AAR89441). The extracellular portion of the chimeric receptor
CC contains a fragment of CD4 (amino acids 1-394 or 1-200 of the CD4
CC sequence, see AAR89450 and AAR89451) which specifically recognises and
CC binds HIV-infected cells, but does not mediate HIV infection. The
CC extracellular domain of the receptor is separated from the cell membrane
CC by 48 or 72 angstroms, or by one or more proteinaceous alpha-helices. The
CC cells expressing the receptor are preferably T cells, B cells,
CC neutrophils, or dendritic cells. The therapeutic cells expressing the
CC chimeric receptor are administered to a mammal to treat HIV infection
XX
XX Sequence 532 AA:
SQ
Query Match 100.0%; Score 2029; DB 2; Length 532;
Best Local Similarity 100.0%; Pred. No. 3.3e-135;
Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MNRGVFRRHLLVQLALIPAATQGNKVVLGKKGDTVELCTASQKKSIQFHWKNSNQIK 60
DB 1 MNRGVFRRHLLVQLALIPAATQGNKVVLGKKGDTVELCTASQKKSIQFHWKNSNQIK 60
QY 61 IIGNQGSPFLTKGPKSLNDRADSRSLMDQGNPFLIKNLKIEDSDTYICEVEDQKEEVOL 120
DB 61 IIGNQGSPFLTKGPKSLNDRADSRSLMDQGNPFLIKNLKIEDSDTYICEVEDQKEEVOL 120
QY 121 LVFGLTANSDTHLQGSLLTLTLESPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
DB 121 LVFGLTANSDTHLQGSLLTLTLESPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
QY 181 TWCTVLOQKQKVEFKIDIVLAFOKASSIVYKKEGEOVEFSPFLAFTVEKLTGSGELMW 240
DB 181 TWCTVLOQKQKVEFKIDIVLAFOKASSIVYKKEGEOVEFSPFLAFTVEKLTGSGELMW 240
QY 241 QAERASSSKSWITFDLKNKEVSVKRVTOPKLOMGKKLPLHLTLPOLPOYAGSGNLTIA 300
DB 241 QAERASSSKSWITFDLKNKEVSVKRVTOPKLOMGKKLPLHLTLPOLPOYAGSGNLTIA 300
QY 301 LEAKTGKLEHVEVNLVVMRATQLOKNLTCVWGPTSPKMLSLKENKEAKVSRERKPVVW 360
DB 301 LEAKTGKLEHVEVNLVVMRATQLOKNLTCVWGPTSPKMLSLKENKEAKVSRERKPVVW 360
QY 361 LNPEAGMOCCLSDSGQVLLSNIKVLPTWSTPV 394
DB 361 LNPEAGMOCCLSDSGQVLLSNIKVLPTWSTPV 394

RESULT 11
AAM02215
ID AAM02215 standard; protein; 532 AA.
AC AAM02215;
XX
XX 16-OCT-2003 (revised)
DT 11-NOV-1996 (first entry)
XX
XX CD4:T-cell receptor eta chain chimeric receptor.
DE
XX
XX Chimeric receptor; cellular immunity; adoptive immunotherapy; CD4;
KM human immunodeficiency virus type 1; HIV-1; AIDS; CTL;
KW T-cell receptor eta chain; cytotoxic T lymphocyte; CTL.
XX
XX Homo; sapiens.
XX
XX Mus sp.
OS Chimeric.
XX
XX Key
FH Domain
FT 1.393
FT /label= "Extracellular domain"
FT /note= "CD4 extracellular domain"
FT 394.396
FT /label= "linker"
FT /note= "encoding DNA contains a BamHI site used for
FT fusion construction"
FT 397.532
FT Region

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FT FT /note= "region of fusion derived from eta chain,
FT FT preferred signal-transducing portions for constructs of
FT FT the invention are amino acids 421-532, 423-455, 438-455,
FT FT 461-494, 494-528 or 400-420"
FT FT
FT FT Domain
FT FT /label= "Transmembrane domain
FT FT /note= "eta chain transmembrane domain"
FT FT 438..575
FT FT /label= "intracellular domain
FT FT /note= "eta chain intracellular domain"
FT FT
PN WO9625953-A1.
XX
XX 29-AUG-1996.
XX
XX 25-JAN-1996; 96WO-US001056.
XX
XX 24-FEB-1995; 95US-00394176.
XX
XX (GEO ) GEN HOSPITAL CORP.
XX
XX Seed B, Romeo C, Kolanus W;
XX
XX WPI; 1996-402134/40.
XX
XX N-PSDB; AAT36760.
XX
XX
XX Direction of cellular immune response using therapeutic cell expressing 2
XX PT chimeric receptors - comprising region binding to target cell and region
XX PT that signal target cell destruction, or CD28 region, partic. for
XX PT eliminating HIV-infected cells.
XX
XX Claim 7; Page 77-78; 120pp; English.
XX
XX A chimeric receptor (AAW00215) comprises the extracellular domain of an
XX CC engineered form of the CD4 cellular receptor for HIV and the
XX CC transmembrane and intracellular regions, including the cytolytic signal-
XX CC transducing portion, of the mouse T-cell receptor eta chain. It can be
XX CC obtd. by inserting a gene fusion (AAT36760) into a vaccinia virus vector
XX CC and expression in host cells. Chimeric receptors comprising CD4 fused to
XX CC eta, eta (see also AAW02213) or Fc receptor gamma (see also AAW02214)
XX CC chains are capable of directing cytotoxic T lymphocytes to specifically
XX CC recognise and kill cells expressing HIV gp120, thus providing a therapy
XX CC for AIDS. (Updated on 16-Oct-2003 to standardise OS field)
XX
XX
XX Sequence 532 AA;
SQ
Query Match 100.0%; Score 2029; DB 2; Length 532;
Best Local Similarity 100.0%; Pred. No. 3.3e-135;
Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
1 MNRGVPFRHLVLTQALPAATQGNKVVLGKKGDTVELTCTASQKKSIOFHKNSNOIK 60
DB 1 MNRGVPFRHLVLTQALPAATQGNKVVLGKKGDTVELTCTASQKKSIOFHKNSNOIK 60
QY 1 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
DB 61 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
QY 61 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
DB 61 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
QY 121 LVFGLTANSDTHLLOGQSILTLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLEIODSG 180
DB 121 LVFGLTANSDTHLLOGQSILTLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLEIODSG 180
QY 181 TWTCYLVONOKKVEFKIDIVVLAFOKASSIVYKKEGBOVEFSPPLAFTVYKLTGSGELMW 240
DB 181 TWTCYLVONOKKVEFKIDIVVLAFOKASSIVYKKEGBOVEFSPPLAFTVYKLTGSGELMW 240
QY 241 QABRASSSKSWITFDLKNKEVSIVRYTQDKLQMGKKLPLHLTLPOLPYAGSGNULTTA 300
DB 241 QABRASSSKSWITFDLKNKEVSIVRYTQDKLQMGKKLPLHLTLPOLPYAGSGNULTTA 300
QY 301 LEAKTKLHOEVNLVVMRATOLQKNLTCEVWGPSTSPKMLSLKENKAVSGREKRVWY 360
DB 301 LEAKTKLHOEVNLVVMRATOLQKNLTCEVWGPSTSPKMLSLKENKAVSGREKRVWY 360

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QY 361 LNPEAGMOCILSDSGVLLSNIKVLPTWSTPV 394
DB 361 LNPEAGMOCILSDSGVLLSNIKVLPTWSTPV 394
RESULT 12
ID AAW83141 standard; protein; 532 AA.
XX
XX AAW83141;
XX
XX 03-FEB-1999 (first entry)
XX
XX Chimeric receptor containing human eta polypeptide.
XX
XX Human; zeta; eta; gamma; membrane-bound chimeric receptor; infection;
XX KW tumour; cancer cell; autoimmune-generated cell; T cell receptor; CD3;
XX KW CD4; B cell receptor; Fc receptor; pathogen; bacterial; fungal;
XX KW protozoan; viral.
XX
XX Synthetic.
XX OS Homo sapiens.
XX
XX US5843728-A.
XX
XX 01-DEC-1998.
XX
XX 05-APR-1995; 95US-00417495.
XX
XX 07-MAR-1991; 91US-00665961.
XX PR 06-MAR-1992; 92US-00847566.
XX PR 28-FEB-1994; 94US-00203866.
XX
XX (GEO ) GEN HOSPITAL CORP.
XX
XX Romeo C, Kolanus W, Seed B;
XX
XX WPI; 1999-044582/04.
XX
XX N-PSDB; AAV70157.
XX
XX Membrane-bound chimeric receptors - comprising extracellular portion
XX PT which recognises and binds a target cell and an intracellular portion of
XX PT e.g. a T-cell receptor.
XX
XX Claim 11; Col 45-48; 57pp; English.
XX
XX The present invention describes DNA encoding a membrane-bound chimeric
XX CC receptor comprising: (a) an extracellular portion that specifically
XX CC recognises and binds a target cell or a target infective agent; and (b)
XX CC an intracellular portion of a T-cell receptor CD3, zeta or eta
XX CC polypeptide, a B-cell receptor polypeptide or an Fc receptor polypeptide.
XX CC The present sequence represents a chimeric receptor containing the human
XX CC eta polypeptide. Cells expressing chimeric receptors of the present
XX CC invention can be administered to mammals in order to destroy pathogens
XX CC (e.g. bacteria, fungi, protozoa or viruses, especially HIV), cancer cells
XX CC or autoimmune-generated cells
XX
XX
XX Sequence 532 AA;
SQ
Query Match 100.0%; Score 2029; DB 2; Length 532;
Best Local Similarity 100.0%; Pred. No. 3.3e-135;
Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
1 MNRGVPFRHLVLTQALPAATQGNKVVLGKKGDTVELTCTASQKKSIOFHKNSNOIK 60
DB 1 MNRGVPFRHLVLTQALPAATQGNKVVLGKKGDTVELTCTASQKKSIOFHKNSNOIK 60
QY 1 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
DB 61 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
QY 61 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
DB 61 IIGNOSFLTGPSSKLNDRADSRSLMDQGNPFLIIKNLKIEDSDTYICEVEDQKEEVOI 120
QY 121 LVFGLTANSDTHLLOGQSILTLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLEIODSG 180

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Db 121 LVFGLTANSDPTHLQGGSLTLTLESPGSSPSVQCRSPKKNIQGGKTLVSQLELDG 180
Qy 181 TWCTVLQONQKVEFKIDIVLAFQKASSIVYKKEGQVEFSPPLAFTVEKLTGSGELMW 240
Db 181 TWCTVLQONQKVEFKIDIVLAFQKASSIVYKKEGQVEFSPPLAFTVEKLTGSGELMW 240
Qy 241 QAERASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKKLPHLTLPLPOLPYAGSGNLTLLA 300
Db 241 QAERASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKKLPHLTLPLPOLPYAGSGNLTLLA 300
Qy 301 LEAKTGKLGHOENVLVVWRATQLOKNLTCEVWGPTSPKMLSLKLENKEAVSRKRPVWV 360
Db 301 LEAKTGKLGHOENVLVVWRATQLOKNLTCEVWGPTSPKMLSLKLENKEAVSRKRPVWV 360
Qy 361 LNPEAGMOCCLSDSGQVLLBSNIKVLPWTSTPV 394
Db 361 LNPEAGMOCCLSDSGQVLLBSNIKVLPWTSTPV 394

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RESULT 13

AA27276
ID AAR27276 standard; protein; 575 AA.

AC AAR27276;
XX
XX 25-MAR-2003 (revised)
DT 28-JUL-1995 (first entry)
XX
XX CD4: zeta peptide chimeric protein.

XX Fusion protein; CD4: extracellular domain; zeta; eta; gamma;
KM membrane spanning domain; intracellular domain; type I;
KW integral membrane homodimer; TCR; T cell antigen receptor;
XX extracellular domain; mouse; human; receptor; chimera;
XX HPB-ALL tumour cell line; natural killer cell.

OS Homo sapiens.

XX Key Location/Qualifiers
FH Protein 1..399
FT /note="CD4 extracellular domain"
FT Protein 400..575
FT /note="zeta membrane spanning and intracellular domain"

XX MO9215322-A1.

XX 17-SEP-1992.

XX 06-MAR-1992; 92MO-US001785.

XX 07-MAR-1991; 91US-0065961.

XX (GEHO) GEN HOSPITAL CORP.

XX Seed B, Romeo C, Kolanus W;

XX WPI; 1992-331474/40.

XX N-PSDB; AAQ28704.

XX Therapeutic cells expressing chimeric receptors - directing cellular
PT response to an infective agent, useful in treating HIV-1, AIDS
PT Pneumocystis carinii infections etc.

XX Example 2; Page 72-73; 114pp; English.

XX This sequence represents a fusion protein between the CD4 extracellular
CC domain and the zeta protein membrane spanning domain and intracellular
CC domain. Zeta is a 32 kD type I integral membrane homodimer which has a 9
CC residue extracellular domain and a 112/113 residue intracellular domain
CC for mouse and human protein respectively. In the production of the CD4
CC receptor chimera, the zeta cDNA was isolated from the HPB-ALL tumour cell
CC line and from human natural killer cells. The zeta cDNA was joined to the

CC extracellular domain of an engineered form of CD4 possessing a BamHI site
CC just upstream of the membrane spanning domain. By a BamHI site naturally
CC present a few residues upstream of the membrane spanning domain. (updated
CC on 25-MAR-2003 to correct PN field.)

XX Sequence 575 AA:

Query Match 100.0%; Score 2029; DB 2; Length 575;
Best Local Similarity 100.0%; Pred. No. 3.6e-135;
Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy 1 MNRGVEFRLHLVLTQALLPATQGNKVVYLGKKGDVTELTCTASQKKSIGFWKNSNQIK 60
Db 1 MNRGVEFRLHLVLTQALLPATQGNKVVYLGKKGDVTELTCTASQKKSIGFWKNSNQIK 60
Qy 61 ILGNQGSFLLTKGSKANDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEEVOL 120
Db 61 ILGNQGSFLLTKGSKANDRADSRSLMDQGNFLLIKNLKIEDSDTYICEVEDQKEEVOL 120
Qy 121 LVFGLTANSDPTHLQGGSLTLTLESPGSSPSVQCRSPKKNIQGGKTLVSQLELDG 180
Db 121 LVFGLTANSDPTHLQGGSLTLTLESPGSSPSVQCRSPKKNIQGGKTLVSQLELDG 180
Qy 181 TWCTVLQONQKVEFKIDIVLAFQKASSIVYKKEGQVEFSPPLAFTVEKLTGSGELMW 240
Db 181 TWCTVLQONQKVEFKIDIVLAFQKASSIVYKKEGQVEFSPPLAFTVEKLTGSGELMW 240
Qy 241 QAERASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKKLPHLTLPLPOLPYAGSGNLTLLA 300
Db 241 QAERASSSKSWITFDLKNKEVSVKRYTQDPKLOMGKKLPHLTLPLPOLPYAGSGNLTLLA 300
Qy 301 LEAKTGKLGHOENVLVVWRATQLOKNLTCEVWGPTSPKMLSLKLENKEAVSRKRPVWV 360
Db 301 LEAKTGKLGHOENVLVVWRATQLOKNLTCEVWGPTSPKMLSLKLENKEAVSRKRPVWV 360
Qy 361 LNPEAGMOCCLSDSGQVLLBSNIKVLPWTSTPV 394
Db 361 LNPEAGMOCCLSDSGQVLLBSNIKVLPWTSTPV 394

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RESULT 14

AA278676
ID AAR78676 standard; protein; 575 AA.

XX AAR78676;

XX 16-APR-1996 (first entry)

XX T-cell receptor zeta.

XX Chimeric receptor; CD4; T-cell receptor zeta; HIV; cytotoxicity;
KW human immunodeficiency virus; adoptive immunotherapy.

XX Homo sapiens.

XX MO9521528-A1.

XX 17-AUG-1995.

XX 12-JAN-1995; 95MO-US000454.

XX 14-FEB-1994; 94US-00195395.

XX 02-AUG-1994; 94US-00284391.

XX (GEHO) GEN HOSPITAL CORP.

XX Seed B, Banapur B, Romeo C, Kolanus W;

XX WPI; 1995-292893/38.

XX N-PSDB; AAQ36122.

XX Target cytotoxicity of HIV-infected cells - by chimeric CD4 receptor-bearing
PT cells.

XX Example 2; Page 76-77; 118pp; English.
 PS Fusion proteins comprising the extracellular domain of CD4 fused to T-
 XX cell receptor zeta, gamma or eta (AAR78676-78, respectively) were
 CC expressed in CV1 using a vaccine virus vector. These CD4:zeta, CD4:gamma
 CC and CD4:eta chimeric receptors mediated cytolysis of targets expressing
 CC HIV gp120/41
 XX
 SQ Sequence 575 AA;
 Query Match 100.0%; Score 2029; DB 2; Length 575;
 Best Local Similarity 100.0%; Pred. No. 3.6e-135;
 Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MNRGVPFRHLVLTALPAATQGNKVLGKGDVTELTCTASQKSIQFHMKNNOIK 60
 DB 1 MNRGVPFRHLVLTALPAATQGNKVLGKGDVTELTCTASQKSIQFHMKNNOIK 60
 QY 61 ILGNQGSFLLTKGPKSLNDRADSRSLMDQGNFPLIINKLIEDSDTYICEVEDQKEEVOL 120
 DB 61 ILGNQGSFLLTKGPKSLNDRADSRSLMDQGNFPLIINKLIEDSDTYICEVEDQKEEVOL 120
 QY 121 LVFGILTANSDTHLLOGSITLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 DB 121 LVFGILTANSDTHLLOGSITLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 QY 181 TWTCTVLONOKKVEFKIDIVLAFOKASSIVYKKEGQVEFSPLAFTVEKLTGSGELMW 240
 DB 181 TWTCTVLONOKKVEFKIDIVLAFOKASSIVYKKEGQVEFSPLAFTVEKLTGSGELMW 240
 QY 241 QABRASSSKSWITFDLKNKEVSVKRVTPQDPLQWGGKPLHLTLPLQALPOYAGSGNLTLLA 300
 DB 241 QABRASSSKSWITFDLKNKEVSVKRVTPQDPLQWGGKPLHLTLPLQALPOYAGSGNLTLLA 300
 QY 301 LEAKTGKHOEVNLVVMARATOLQKNLTCEVWGPTSPKMLSLKLENKAKVSKREKPYWV 360
 DB 301 LEAKTGKHOEVNLVVMARATOLQKNLTCEVWGPTSPKMLSLKLENKAKVSKREKPYWV 360
 QY 361 LNPEAGMOCILSDSGQVLLSNIKVLPTWSTPV 394
 DB 361 LNPEAGMOCILSDSGQVLLSNIKVLPTWSTPV 394
 RESULT 15
 AAR89456
 ID AAR89456 standard; protein; 575 AA.
 XX
 AC AAR89456;
 XX
 DT 26-SEP-1996 (first entry)
 XX
 DE CD4:zeta fusion protein.
 XX
 DE CD7; transmembrane domain; chimeric receptor; CD5; CD34; CH2; CH3; IgG1;
 KW human; CD4; HIV; proteinaceous alpha-helix; T cell; B cell; neutrophil;
 KW dendritic cell; therapy; mammal; infection.
 XX
 OS Synthetic.
 XX
 PN WO9603883-A1.
 PD 15-FEB-1996.
 XX
 PF 26-JUL-1995; 95WO-US009468.
 XX
 PR 02-AUG-1994; 94US-00284391.
 PR 24-FEB-1995; 95US-00394388.
 XX
 PA (GENO) GEN HOSPITAL CORP.
 PI Seed B, Banapur B, Romeo C, Kolanus W;
 XX

DR WPI: 1996-129034/13.
 DR N-PSDB; AAT10801.
 XX
 PT Membrane-bound chimeric receptor comprising extracellular portion
 PT including CD4 fragment - cells expressing receptor can be used for
 PT treatment of HIV infection.
 XX
 PS Example 2; Page 77-78; 134pp; English.
 XX
 CC AAT10801-T10803 represent membrane bound proteinaceous chimeric receptors
 CC of the invention. This sequence represents the CD4:zeta chimera. The
 CC transmembrane region of the chimeric receptor acts to separate the
 CC intracellular and extracellular domains of the chimera, and contains a
 CC portion of the CD7 (see AAR89440), CD5 or CD34 transmembrane domain.
 CC Alternatively, the extracellular portion of the receptor can be separated
 CC from the intracellular domain by the hinge, CH2 and CH3 domains of human
 CC IgG1 (see AAR89441). The extracellular portion of the chimeric receptor
 CC contains a fragment of CD4 (amino acids 1-394 or 1-200 of the CD4
 CC sequence, see AAR89450 and AAR89451) which specifically recognizes and
 CC binds HIV-infected cells, but does not mediate HIV infection. The
 CC extracellular domain of the receptor is separated from the cell membrane
 CC by 48 or 72 angstroms, or by one or more proteinaceous alpha-helices. The
 CC cells expressing the receptor are preferably T cells, B cells,
 CC neutrophils, or dendritic cells. The therapeutic cells expressing the
 CC chimeric receptor are administered to a mammal to treat HIV infection
 XX
 SQ Sequence 575 AA;
 Query Match 100.0%; Score 2029; DB 2; Length 575;
 Best Local Similarity 100.0%; Pred. No. 3.6e-135;
 Matches 394; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 MNRGVPFRHLVLTALPAATQGNKVLGKGDVTELTCTASQKSIQFHMKNNOIK 60
 DB 1 MNRGVPFRHLVLTALPAATQGNKVLGKGDVTELTCTASQKSIQFHMKNNOIK 60
 QY 61 ILGNQGSFLLTKGPKSLNDRADSRSLMDQGNFPLIINKLIEDSDTYICEVEDQKEEVOL 120
 DB 61 ILGNQGSFLLTKGPKSLNDRADSRSLMDQGNFPLIINKLIEDSDTYICEVEDQKEEVOL 120
 QY 121 LVFGILTANSDTHLLOGSITLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 DB 121 LVFGILTANSDTHLLOGSITLTLESPPGSSPSVQCRSPRGKNIQGGKTLVSQLELDQSG 180
 QY 181 TWTCTVLONOKKVEFKIDIVLAFOKASSIVYKKEGQVEFSPLAFTVEKLTGSGELMW 240
 DB 181 TWTCTVLONOKKVEFKIDIVLAFOKASSIVYKKEGQVEFSPLAFTVEKLTGSGELMW 240
 QY 241 QABRASSSKSWITFDLKNKEVSVKRVTPQDPLQWGGKPLHLTLPLQALPOYAGSGNLTLLA 300
 DB 241 QABRASSSKSWITFDLKNKEVSVKRVTPQDPLQWGGKPLHLTLPLQALPOYAGSGNLTLLA 300
 QY 301 LEAKTGKHOEVNLVVMARATOLQKNLTCEVWGPTSPKMLSLKLENKAKVSKREKPYWV 360
 DB 301 LEAKTGKHOEVNLVVMARATOLQKNLTCEVWGPTSPKMLSLKLENKAKVSKREKPYWV 360
 QY 361 LNPEAGMOCILSDSGQVLLSNIKVLPTWSTPV 394
 DB 361 LNPEAGMOCILSDSGQVLLSNIKVLPTWSTPV 394
 Search completed: March 7, 2005, 07:12:58
 Job time : 167.813 secs